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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,533	12/21/2001	Michael D. Harris	SP00-381	1674

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CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER
LOPEZ, CARLOS N

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,533	HARRIS ET AL.	
	Examiner	Art Unit	
	Carlos Lopez	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3 IDS's*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1) Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlik et al (WO 97/30933) in view of Pickrell et al (US 6,210,612). Pavlik discloses a method and apparatus for the making fused silica boule. Pavlik introduces a silicon containing precursor, using a delivery system 12, into the furnace 10 where it is combusted and oxidized into soot by flames produced by burners 18 (Bridging paragraph of pages 4-5). As noted in bridging paragraph of pages 4-5, the soot is then collected and consolidated to form a boule. Pavlik is silent providing a refractory for the furnace 10 having a foamed refractory material with a network of interconnected pores. Pickrell discloses an improved ceramic material for use in refractory (Col. 1, lines 9-10). As noted by Pickrell the ceramic material comprises of interconnected voids, deemed as the claimed pores, which are stronger, more thermally shock resistant, possesses uniformly dispersed and highly controlled pore sizes (See abstract and col. 2, lines 1-4). Hence, at the time the invention was made it would have been obvious to a person of ordinary skill in the art to provide Pavlik's furnace with a refractory made of the ceramic

material, which includes the claimed interconnected pores, taught by Pickrell because it would provide a stronger and more thermally shock resistant refractory.

In regards to the limitation of "foamed refractory material", it is noted that while a foamed process does not make the Pickrell refractory material, it still meets the structural limitations recited in the claims, a refractory material having interconnected pores. It is considered that the foamed refractory material as recited in the instant claims is the same as or obvious from a refractory material of the prior art (Pickrell), the claim is unpatentable even though a different process made the prior refractory material of Pickrell. See In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

As for claims 3 and 8, Pickrell discloses that the refractory material has a range of porosities of up to 95%.

In regards to claims 2 and 7, due to the highly porous refractory material of Pickrell having up to 95% porosity, it would be expected that the refractory material have a high surface area greater than $0.5m^2/g$.

In regard to claims 4 and 9 due to the highly porous refractory material of Pickrell having up to 95% porosity, it would be expected that the refractory material have a low density. Furthermore, furnace refractories with the claimed density are known in the art to have the claimed density as noted by the alternative rejection of claims 4 and 9 below.

In regards to claims 5 and 10, Pickrell does not use sodium or iron in the production of the refractory material. Hence no sodium or iron would be expected to present in the refractory. Furthermore, it is known in the art that a refractory with a low

iron and sodium content is desired as noted by the alternative rejection of claims 5 and 10 below.

2) Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlik et al (WO 97/30933) in view of Pickrell et al (US 6,210,612) as applied to claims 1 and 6 above, and in further view of Pavlik et al (US 6,574,991). Pavlik and Pickrell are silent disclosing the density of the refractory material used in the crown of a glass furnace. However, absent any indication by Pavlik or Pickrell, a person of ordinary skill in the art at the time the invention was made would expect Pavlik and Pickrell teachings to have a refractory density as used and known in the art. As noted by Pavlik '991 refractory for the crown of a glass furnace, have a density of less than or equal to 1.4 g/cm^3 (Col. 8, line 9).

3) Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlik et al (WO 97/30933) in view of Pickrell et al (US 6,210,612) as applied to claims 1 and 6 above, and in further view of Sempolinski et al (US 5,332,702). As noted by Pavlik, the refractory material undergoes a cleaning step to remove metals such as iron so that it has less than 300ppm metal content but is silent disclosing the amount of iron content in the refractory. Sempolinski notes that a refractory body having iron less than 30ppm is desired since a reduction in ion contends of the refractory would decrease the amount of sodium contamination of the produced boule to thus have a positive effect on the UV transmission of the resultant glass boule (Abstract and Col. 4lines 27-35). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided the refractory of Pavlik with a sodium content less than 30ppm

as taught by Sempolinski in order to reduce the amount of sodium contamination in the produced boule. Thus the combined teachings of Pavlik, teaching a metal content less than 300ppm and Sempolinski, teaching a sodium content of less than 30ppm, clearly envisages a refractory to have iron and sodium impurities of less than 10ppm in order to produce a pure glass boule having decreased impurities, since Sempolinski has shown that contaminants in a refractory can be transferred to the glass boule.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

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